

ABSTRACT OF THE DISCLOSURE

A method and a device for production of fullerene-related carbon nanotubes and fullerenes in direct current arc discharge between two graphite electrodes are disclosed. Two features distinctive from conventional arc discharge technique providing remarkably high productivity of the present method are introduced. The first feature comprises means for maintaining an optimal temperature of anode end surface to suppress formation of large carbon clusters and micro-crystallite carbon particles useless for synthesis of carbon nanotubes and fullerenes. The second one comprises means for maintaining an optimal concentration of carbon and catalyst vapor in vapor generation zone to ensure optimal yields of carbon nanotubes and fullerenes. Airtight plug-in cartridges are used to supply consumable electrodes and catalyst material inside closed-loop device without process being stopped. The means to perform automatic continuous feeding of consumable electrodes and catalyst, pneumatic transportation of condensables and their automatic continuous discharge are also described.